Lab Practical

EAmt-Q02P

1. You purchases a 800,000 home. Mortgage payments are to made monthly for 35 years, with the first payment to be made one month from now. The annual effective rate of interest is 4%.

   (a) Calculate the amount of each monthly repayment before the additional payments, without using a scenario solving tool such as Goal Seek or Solver.

   (b) Construct the loan schedule for the mortgage.

(1 mark)

EAmt-Q06P

2. You are buying a house and have taken out a mortgage. The mortgage of 900,000, has a term of 30 years. For the first 6 months, no repayments are made, although interest still accrues on the loan. Interest-only repayments are due from this point until the end of the third year. After the end of the third year, and up to the end of the term, level repayments are due, set at a level such that the mortgage will be repaid in full at the end of the 30-year term. All repayments are made monthly in arrears. Interest is charged at an effective rate of 3.5% p.a.

   (a) Calculate the amount of each monthly repayment, without using a scenario solving tool such as Goal Seek or Solver.

   (b) Construct the loan schedule for the mortgage.

(1 mark)

EAmt-Q07P

3. You are buying a house and have taken out a mortgage. The mortgage of 300,000, has a term of 30 years. For the first 6 months, no repayments are made, although interest still accrues on the loan. Interest-only repayments are due from this point until the end of the third year. After the end of the third year, and up to the end of the term, level repayments are due, set at a level such that the mortgage will be repaid in full at the end of the 30-year term. All repayments are made monthly in arrears. Interest is charged at an effective rate of 4.5% p.a. The conditions of the loan permit borrowers to make additional payments in order to reduce the term of the mortgage. These additional payments can be made once each year, excluding the first year, subject to a maximum of 10% of the outstanding capital amount, as determined at the beginning of each year of payment. The original repayments, including the repayments in the first 3 years, will not change but the term of the mortgage will reduce. The original repayment schedule will remain unchanged except for the term. You decide to make additional payments to reduce the term of the mortgage as much as possible.

   (a) Calculate the amount of each monthly repayment, without using a scenario solving tool such as Goal Seek or Solver.

   (b) Construct the loan schedule for the mortgage.

   (c) Determine the shortest possible term that can be achieved in this way.

(1 mark)